

How to create a water wise garden in Central Australia



PROUDLY BROUGHT TO YOU BY POWER AND WATER CORPORATION
AND THE NURSERY & GARDEN INDUSTRY NT



Nursery & Garden Industry
Australia



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Why be water wise?

As Australians we live on one of the driest continents on earth. We also consume more water per person than just about anybody else on the planet.

In Alice Springs, people use up to three times as much water as people living in most Australian capital cities. That makes us possibly the biggest water users in Australia.

Many of us in the centre mistakenly believe that we have a guaranteed ongoing water supply because our water comes from underground. But our water supply is actually finite and, with climate change likely to impact on rainfall patterns, we need to develop new water habits – especially as our population grows. Otherwise, we could face water shortages in the future.

Now is the time to start conserving water by using it more efficiently, and the garden is a great place to start. Up to 60 per cent of our water use is outside the home, mostly in gardens.

Being water wise in the garden doesn't mean you have to compromise on having a beautiful garden. In fact, if you follow the tips in this book, your garden could look better than ever.

Five tips to save water in the garden:

1. Use local native or drought resistant plants
2. Have well mulched soil
3. Use a drip irrigation system
4. Lose some lawn
5. Fix leaking taps

In Alice Springs, people use up to three times as much water as people living in most Australian capital cities. That makes us possibly the biggest water users in Australia.



Planning your garden

By planning your garden carefully you can make it look great, be water wise and avoid problems years down the track.

In the planning stages you should:

- Consider the conditions in different parts of your garden. Some areas may receive more sun or shade, some may be exposed to wind. Properties in Central Australia require hardy drought tolerant plants that can handle extremes in temperature.
- Group plants that have similar watering requirements. If they are together, it will be easier to water them more efficiently and encourage stronger growth. Connect these groups or individual plants with similar water requirements to a separate irrigation line for individual programming.
- Choose water-efficient plants – ask your local nursery for advice on selecting plants that don't require lots of water.
- Reduce the area of lawn in your garden – lawn is a big water guzzler. Grow trees to shade lawn areas. This will help reduce water needs, as well as cooling down your home.
- Consider how tall and how wide your plant will grow. It needs to be at least three metres clear of powerlines when fully grown. Avoid planting trees under powerlines, over power and water easements or in places that would restrict access to meters.
- Plan your reticulation system to cater for your immediate needs and possible garden expansion. Draw a map of your irrigation lines to make maintenance easier.

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- Check for dripping or leaking taps and fix them – a tap that drips a drop each second will waste more than 12,000 litres of water a year.
- Dial before you dig. Before digging trenches or holes in your garden dial 1100 to check for underground telephone cables, powerlines and water pipes.
- Think about installing a rainwater tank or grey water reuse system for alternative sources of water (you will need to seek approval from relevant government agencies including the Department of Health and Community Services, Department of Planning and Infrastructure and Department of Natural Resources, Environment and the Arts).



Grass clippings are great for your garden in Alice Springs. Add them to a compost bin or pile in your yard and wait for them to break down so you can use them as fertiliser.

Getting it right from the start

● Soil

Central Australian soils are generally sandy, free draining, low in nutrients, alkaline and sometimes saline. Continual use of saline ground water will increase the pH (alkalinity) of soils and affect the nutrient uptake of plants.

The secret to creating a beautiful water-efficient garden in Central Australia is choosing the appropriate plants for the existing soil, climate and water supply. There is a large range of natives or hardy ornamentals to choose from.

For plants such as fruit trees, softer ornamentals and most vegetables and herbs, you will need to alter the condition of your soil to help feed and maintain the vigour of your plants. It needs to be pH neutral and full of healthy micro-organisms and organic matter.

A good way to see whether your soil is nutrient-rich is to check for worms. Lots of big worms indicate good healthy soil; however, the hot summer temperatures in Central Australia mean worms are rarely seen in our gardens.

Two easy ways to improve your soil condition are mulch and organic fertilisers. Organic fertilisers and mulches help lower pH in soils and improve their structure and nutrient levels.

● Mulch

Mulch is a surface cover that you put around your plants to retain water and beautify your garden. Mulch is also good for inhibiting weed growth.

Usually mulch is organic material that has been broken down until it is full of nutrients and ready for the garden. However, in Central Australia we also take advantage of local materials such as sands and gravels to use as mulches.

Typical types of mulch you will find in Central Australia include woodchips, hay, straw, composted recycled green waste, river rubble, river sand and a variety of crushed stone.

Organic mulches in Central Australia are mostly beneficial for soil structure and nutrient enhancement when used in combination with surface irrigation on vegetable, herb or very sheltered garden beds.

Non-organic (stone or sand) mulches do not add nutrients to the soil, but nutrients can easily be added at time of planting and as required seasonally. These mulches are very cost effective and achieve the far more important benefits of reducing soil temperatures and evaporation and suppressing weeds. Care is needed because they can become hot on the surface and reflect heat, which can burn some plants.

The general rules when mulching in Central Australia are:

- Do not let the mulch touch the base of the plant – this may rot your plant.
- Mulch before, during or after planting. The ideal time for planting is in the autumn for frost tolerant plants or during spring for frost sensitive plants. Otherwise, you can still mulch at any time of the year – but preferably before summer.
- Place drip irrigation emitters on top of the soil but under the mulch.
- Replace organic mulches at least once a year to maintain their effectiveness. Organic mulches break down over time, which improves the soil structure. Finer mulches will break down quicker than coarse materials. Sand and gravel mulches don't break down, so your garden may require extra fertiliser to compensate. You may need to remove leaf litter to keep it tidy.

● Fertiliser

Fertiliser will add nutrients to your soil, ensuring better plant growth.

Organic fertilisers or controlled release fertilisers are the best products to use in Alice Springs. Organic fertilisers include manures, compost, liquid organic fertilisers such as seaweed and fish extracts or blood and bone. Inorganic trace element supplements may be used to correct any specific deficiencies in your garden.

It is best to dig fertilisers into your soil, rather than lay them on top.

Some ideal fertilisers in Central Australia are:

Controlled release fertilisers

A range of fertilisers are available. Look for release times appropriate to your needs. Follow product recommendations or seek advice from your local nursery professional.

Packaged organic fertilisers

Pelletised manures

An industry standard that is widely used. Great nutrient value with the added bonus of lignin to encourage micro-organisms. Follow product recommendations or seek advice from your local nursery professional.

Blood and Bone

A waste product from the abattoir industry, excellent as top dressing material in established gardens or for adding to soils at the time of planting. Follow product recommendations or seek advice from your local nursery professional.

Liquid organic fertilisers

These are an effective and efficient way of supplying nutrients to your fruit trees, vegetable and herb gardens. There are many products on the market including fish emulsion and liquefied seaweed products.

Manures

Aged chicken manure

Use light, regular doses as it is high in nitrogen and may burn some sensitive plants like hakeas and grevilleas. Water in well.

Composted cow or horse manures

These manures are great for building up the organic content of your vegetable and herb garden beds and encouraging micro-organisms.

Horse manure is particularly prone to weed infestation so remove any weeds if they germinate. Use as a light mulch and water in well, or dig into soils before planting. Best applied after it has dried out, or after composting with pea straw and blood and bone.

Grass clippings

Grass clippings are great additions to your compost and a readily available form of nitrogen. Incorporate the clippings into your compost heap for later use. Generally you can use dried grass clippings in Central Australian compost all year long, but avoid using them when your grass is seeding. Avoid placing green clippings directly around plants as this can cause nitrogen deficiencies.

Compost

You can buy some great bulk compost products locally or easily make it yourself. Generally compost is a range of organic material, such as grass, straw, food (no meat) and garden scraps, put together and broken down. It is often useful to add lime or dolomite to raise the pH, and a supplement like blood and bone to boost the nitrogen content of your compost. The result is a nutrient-rich fertiliser to add to your garden. Seek advice on composting techniques from your local nursery professional.

Other soil additives

It is advisable to monitor your soil pH to see whether it is acidic or alkaline and to see whether plants show any sign of trace element deficiencies. Incorporate additives recommended by your local nursery professional if required.



Drippers are the most water-efficient way to water your plants. They deliver water directly to the roots of your plants. You can get drippers that disperse 2, 4 or 8 litres of water an hour.

Water wise irrigation

Another key to a beautiful and water wise garden is an efficient irrigation system. There are many different ways to water your garden and many things you should take into consideration when choosing your irrigation system:

● Drippers

Drippers are by far the most efficient way to water plants in your garden. They slowly disperse water directly to the roots of your plants and come in 2, 4 and 8 litre capacity per hour. Drippers are easy to install and maintain, however it is still recommended that you install an in-line filter and flush your dripper system for a minute once a week to avoid blockages and ant nesting.

● Mini sprinklers

Primarily designed for under-tree irrigation in orchards, these sprinklers are recommended for use in garden beds to deliver water efficiently. There are many types available; however, several have interchangeable nozzles or deflectors that allow for the watering of a single plant initially to a far larger area as required.

● Pop-up sprinklers

These sprinklers make watering your lawn easy and automated. It is essential to have a timer in case you forget to turn them off. Plan the placement well so the spray reaches your lawn, and is not wasted on the pavement or roads. Contact your local irrigation supplier for a design to best suit your needs, and carefully consider your watering habits so that you are not wasting excess water on your lawn.

● Perforated and porous hoses

These hoses allow water to be applied slowly and can be moved to hard-to-water places. Porous hoses can be buried to supply water directly to the plants' root zone and are great for narrow garden beds.

● Micro-sprayers and misters

Micro-sprayers are not as water-efficient as drippers. They will still get the job done and water your plants, but water loss is more likely because of the wind and evaporation.



● Hand watering by hose

This method is not recommended but, if you do choose to water by hand, use a trigger nozzle to avoid wasting water when moving between plants. Trigger nozzles give you excellent control and you can choose from a variety of spray. Best suited for potted plants in the garden.

● Sprinklers

There is a huge range of sprinklers that you can attach to your hose and move easily around your garden. They are usually cheap and can get to all the spots you need to reach. It is essential to use a tap timer so you don't waste water by forgetting to turn them off. Avoid watering in the heat of the day and when it is windy.

● Timers

Every water wise garden needs an irrigation timer, whether it is a manual timer or a fully automatic system run by an irrigation controller. You may find that installing an automatic irrigation system pays for itself in a relatively short period of time. It is also possible to claim rebates for tap timers under some government water efficiency schemes (visit www.nt.gov.au/nreta for further information).

The best time to water your garden is between dusk and dawn. Watering pre-dawn ensures maximum uptake of water by the plant and minimal water loss through evaporation.

When to water

Each garden's watering requirements will be different and it is up to you to establish how much water your garden needs. In Central Australia, it is recommended that you water deeply and infrequently. This encourages plants to develop deep root systems, making them more drought-tolerant and hardy.

Here are some tips:

- Water between dusk and dawn – preferably before dawn to optimise the uptake of moisture by the plant. Watering at this time also helps to minimise water loss through evaporation.
- Water vegetables around dawn to avoid fungal disease problems.
- The length of time you need to water will depend on your soil type, gradient of your property, water requirements of different areas in your garden, irrigation type and output. Contact your local irrigation supplier and nursery to find the best way to irrigate your garden.

Although they can look terrific and make great living areas for people, lawns are high maintenance and water hungry.

Looking after your lawn

The typical Central Australian garden has some areas of lawn, because it suits our active outdoor lifestyle and warm climate. Although they can look terrific and make great living areas for people, lawns are high maintenance and water hungry.

People in the Alice Springs region often over-water their lawns. Here are some ways you can maintain a beautiful healthy lawn without wasting water:

● Establishing a lawn

- Make sure you have good quality topsoil. Speak to a landscaping specialist to find out how you can improve the soil quality before planting your lawn.
- Too often people don't lay enough topsoil. Make sure it is at least 100mm to 150mm deep – this will ensure enough room for grass roots to keep out of the heat, and so they can search for water.
- Pick a water-efficient species of grass. Generally hybrid couch species (eg Santa Anna, Saltwater and Tiff), Kikuyu and Soft Buffalo are the most water-efficient and hardy lawns for Central Australia. Zoysia sp has been used in more recent times. Seek advice from your local turf supplier who will have trial or display lawns growing on site.
- Do you need so much lawn? Think of areas where you can pave or use ground covers instead of having lawn.

● Maintaining your lawn

- Turn your sprinklers off when it rains.
- Adjust the length of time your sprinklers run for depending on the season. In winter, most Central Australian lawns are dormant and require little or no water. A handy tip in winter is to run your sprinklers for a couple of minutes after dawn to break up any ice caused by frost. This will avoid burning.
- Don't mow your lawn too short. Longer blades of grass shade the roots and reduce evaporation.
- Fertilise your lawn twice a year with a good quality slow release fertiliser. Avoid fertilisers with high nitrogen levels, as this induces excessive growth and water uptake.



Grow plants with the same watering needs together in your garden. This will be more water-efficient and you will know just how much water they need.

Making typical Central Australian gardens water wise

● Arid land garden

A typical established Alice Springs garden consists of a mix of native trees and shrubs and drought-tolerant exotic species. There are ways you can reduce the water needs of these gardens, while ensuring they still look great:

- Consider removing some plants and replacing them with more water-efficient species.
- Make sure garden beds are mulched.
- Consider reducing the size of your lawn by replacing it with pebbles or pavers.
- Use drippers, rather than sprayers or hand watering.
- Use wetting agents, water storage crystals or coir peat to improve water efficiency in the soil.

Water wise plants for an arid land garden:

- Native ornamental species
- Xerophytic (drought resistant) plant species
- Non-invasive exotic species that are adapted to our dry climatic zone.

● Contemporary garden

In recent years new housing estates have boomed in Alice Springs, creating a new style of garden. The Alice Springs contemporary garden is typically on a smaller block and incorporates a mixture of potted and garden bed plants, some lawn as well as ground covers, pavers and water features.

These gardens are designed to be simple and low maintenance. They have the potential to be very water-efficient if planned correctly:

- Have less lawn and more pavers and groundcovers.
- Plant water-efficient species in the garden and pots where possible.
- Mulch all plants, even the ones in pots.
- If building from scratch, make sure you install an automatic watering system when your landscaping is done.

Water wise plants for an Alice Springs contemporary garden include:

- Agave
- Yuccas
- Dwarf bougainvillea
- Lomandra
- Dianellas
- Cycads
- Westringia
- Callistemon
- Native grasses

Bush Garden

Typically found in the rural areas, the bush garden is a mix of natives, and potted exotic species. Generally the areas around the house will be well manicured and structured. The remainder of the block will grow freely and will be low maintenance as it consists of native trees and shrubs.

Some water wise tips for the bush garden include:

- Always have a timer on drippers and sprinklers so you don't have to remember to turn them off.
- Use mulch and compost.
- Only water what you have to. Let nature take care of the rest of your block.
- Retain as much native vegetation as possible.
- Replace thirsty plants with natives near your home. They need less water and will attract more wildlife.
- Remove water-hungry introduced species like Buffel Grass from your block to allow native ephemerals and grasses to establish.

Water wise plants for the bush garden include:

- | | |
|---------------|------------------|
| • Acacias | • Sennas |
| • Eucalypts | • Eremophilas |
| • Grevilleas | • Melaleucas |
| • Callistemon | • Native grasses |

Potted garden

As the unit development boom continues in Alice Springs, many people are leaving their houses and big gardens for smaller dwellings. This doesn't mean missing out on having a garden. Potted gardens are practical, transportable, easy to maintain and look great. Potted plants need special attention in hot Central Australian summers to ensure they do not dry out or suffer excessive heat around their root area.

These tips will help you stay water wise:

- Pot your plants into a premium potting mix made to the Australian Standard – it has a higher water holding capacity so you won't need to water as often.
- Choose larger and deeper pots to help protect your plants from heat stress in the root zone. Shallow pots are prone to greater moisture loss from breeze and evaporation.
- Consider lining plastic pots with coconut fibre to reduce heat transfer to roots.
- Seal porous pots such as terracotta using sealant.
- Set up drip irrigation to each pot, or hand water the plants using a trigger nozzle on a hose or a watering can.
- Mulch around the plant base to retain moisture.
- Select water-efficient species – they don't have to be native.
- Use a saucer on the base of the pot. This keeps your floor or pavers clean, as well as holding extra moisture for the plant to absorb.
- Remember to fertilise your potted plants regularly with a suitable plant food.

Water wise plants for the potted garden include:

- Cycads
- Yuccas
- Agave
- Succulents
- Herbs
- Native fig
- Native sub shrubs like Goodenia, Dipteracanthus, Harnieria

Next time you introduce new plants to your garden, consider using natives to Central Australia.

Water wise native plants for Central Australian gardens

Next time you introduce new plants to your garden, consider using natives to Central Australia. They are well adapted to the local conditions, need less water and will attract wildlife.



Some ideal ornamental Central Australian natives include:

Acacia aneura – Mulga

bivenosa

calicicola – Myall gidgee, Shrubby mulga

cuthbertsonii

cyperophylla

georginae – Georgina gidgee

holosericea

jennerae

kempeana – Witchetty bush

ligulata – Sandhill wattle

maitlandii

salicina

Atalaya hemiglauca

Atriplex nummularia – Old man saltbush

Brachycome ciliaris

Callistemon pauciflorus

Capparis spinosa var. *nummularia*

Chrysocephalum apiculatum

Corymbia aparrerinja – Ghost gum

Cymbopogon ambiguus

Dipteracanthus australasicus

Dodonaea viscosa – Hopbush

Eremophila spp. – Emu bushes

Eucalyptus spp.

Ficus brachypoda

Frankenia cordata

Gossypium sturtianum – Sturt's desert rose

Grevillea striata – Beef wood

Grevillea wickhamii – Holly leaf grevillea

Harnieria kempeana

Melaleuca bracteata

glomerata – Inland tea tree

trichostachya

Olearia stuartii

Prostanthera striatiflora

Ptilotus spp. – Pussy tail, Mulla-Mulla's

Santalum acuminatum – Quandong

Scaevola grandiflora

Senna spp.

Solanum spp. – Bush tomato, potato

Stemodia florulenta

viscosa

Swainsona formosa – Sturt desert pea

Themeda triandra

Triraphis mollis

Wedelia stirlingii



Nursery & Garden Industry NT

Nursery & Garden Industry NT (NGINT) is the peak body representing nurseries and garden centres and a growing number of businesses such as landscaping designers, suppliers and contractors, irrigation services and garden maintenance.

NGINT's goal is to "build better businesses" by helping and supporting their members to improve their performance and professionalism.

Through the national Nursery and Garden Industry Association (NGIA), the industry has developed initiatives to address key water issues. The industry, along with the gardening public, is believed to be a significant user of water. The National Industry Water Policy has been presented to stakeholders and community groups and provides a strategic framework for developing ongoing projects and partnerships on water issues.

The industry is committed to promoting and educating the industry and community about sustainable water use. Gardening is an important part of our outdoor lifestyle and it is also essential for tourism, recreation and leisure.

It is vital that everyone takes responsibility for sustainable water use. In the garden, that means thinking about efficient watering techniques, the quality of the soil and plant selection.

For more information about the NGINT and NGIA and *Wise About Water* gardening tips visit www.ngia.com.au or phone 08 8983 3233.

Power and Water Corporation

Power and Water wants Territorians to use water more efficiently. We know that around 60 per cent of household water is used in the garden, so this is where people can make water savings.

Central Australian residents are some of the biggest water users in the country, and we are striving to help our customers reduce their water consumption and impact on the environment.

Power and Water has teamed up with the Nursery & Garden Industry NT so customers have access to the right advice on water wise gardening.

For more information on how to save water visit www.powerwater.com.au or call 1800 245 092 and pick up a free copy of the Green Guide.



SEE YOUR LOCAL NGINT NURSERY, GARDEN CENTRE OR GARDEN PROFESSIONAL
FOR THE RIGHT ADVICE IN CREATING A WATER WISE GARDEN.



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